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Sheridon

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[54] **CANTED ELECTRIC FIELDS FOR ADDRESSING A TWISTING BALL DISPLAY**

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[58] **Field of Search** 359/296, 298; 345/111, 107; 427/214, 282; 349/117, 188

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[57] **ABSTRACT**

A method for producing a canted electric field for an electrical twisting ball display device made up of electrically and optically anisotropic spheroidal balls rotatably disposed in a substrate. The display has an array of addressable elements, each array element including at least one spheroidal ball. According to the method, an array element is selected. A preferred direction of orientation is selected for balls of the selected array element, the direction of orientation forming an angle with a vector normal to a planar portion of the substrate surface in a vicinity of the selected array element, the angle being greater than 0 degree and less than 180 degrees. Balls of the selected array element are aligned with the preferred direction of orientation by applying an electric field in the vicinity of the selected array element, the electric field having an electric field vector oriented parallel to the selected preferred direction, thereby causing balls of the selected array element to rotate so as to align with the preferred direction of orientation. Also disclosed are: an electrode assembly for addressing a twisting ball display, capable of producing an electric field adjustable as to the direction of orientation of the field over a continuous angular range of directions; and a twisting ball apparatus incorporating this electrode assembly.

20 Claims, 32 Drawing Sheets